

P27157.A01

Serial No.: 10/689,506

**REMARKS**

Claims 1-18 are currently pending in the application. Claims 5, 7-9 and 12-16 have been amended consistent with the Examiner's comments in an effort to resolve the formal claims objections and rejections. No new matter has been added.

Reconsideration of the rejected claims in view of the following remarks is respectfully requested.

***Allowable Claims***

Applicants appreciate the indication that claims 5-9, 13 and 16 contain allowable subject matter. At this time, however, Applicants are not presenting these claims in independent form because it is believed that claims 1 and 10, from which they depend, are allowable. Furthermore, Applicants submit that all of the claims are in condition for allowance for the following reasons.

***Objection to the Claims***

Claims 5, 7 and 13 were objected to on the basis of minor asserted informalities. By this Amendment, Applicants submit that each of the asserted bases of objection has been addressed. In particular, claims 5, 7 and 13 have been amended in the manner suggested by the Examiner.

Accordingly, Applicants respectfully request that the above-noted objection of claims 5, 7 and 13 be withdrawn.

P27157.A01

Serial No.: 10/689,506

***35 U.S.C. § 112 Rejection***

Claims 5, 8, 9 and 14-16 were rejected under 35 U.S.C. § 112, second paragraph, as allegedly being indefinite.

By this Amendment, Applicants submit that each of the asserted bases of rejection has been addressed. In particular, claims 5, 8, 9 and 14-16 have been amended consistent with the Examiner's comments and suggestions.

Accordingly, Applicants respectfully request that the above-noted rejection of claims 5, 8, 9 and 14-16 be withdrawn.

***Double Patenting Rejection***

Claim 12 was rejected under 35 U.S.C. § 101 and was also objected to under 37 CFR 1.75 as reciting the same features as claim 11.

Applicants respectfully disagree that claims 12 and 11 recite the same subject matter. As the Examiner will note, claim 11 recites that the first material is SiGe and the second material is SiC; whereas, claim 12 recites that the first material creates a compressive stress within the pFET channel and the second material creates a tensile stress within the nFET channel. While it is true that invention utilizes the features in claim 11 to produce the results in claim 12, it does follow that claim 11 requires in all cases the specific results recited in claim 12.

Applicants are nevertheless amending claim 12 to depend from claim 10 instead of claim 11 in an effort to resolve this rejection/objection and because such an amendment does not result in narrowing amendment of claim 12.

P27157.A01

Serial No.: 10/689,506

Accordingly, Applicants respectfully request that the above-noted rejection/objection of claim 12 be withdrawn.

***35 U.S.C. §102 Rejection***

Claims 1-4, 10-12, 14, 15, 17 and 18 were rejected under 35 U.S.C. §102(e) over US Publication 2004/0256614 to OUYANG et al. The rejection is respectfully traversed.

Under § 1.131, a rejection under 35 U.S.C. § 102(e) based on a patent or printed publication may, upon a proper showing, be overcome by removing the printed publication as a reference against the claims. Applicants submit that the § 1.131 Declaration submitted herewith is sufficient to remove the OUYANG publication under the § 102(e) rejection as a reference and thus is sufficient to overcome the above-noted rejection.

More specifically, Applicants submit that the § 1.131 Declaration is formally and substantively sufficient to establish that the Inventors had completed the invention defined in at least claims 1 and 10 (as well as the dependent claims) in the United States before the effective date of the OUYANG reference, i.e., June 17, 2003. The statements in the Declaration show that the formal requirements of § 1.131 is satisfied, namely:

- (1) the rejection to be overcome is under § 102(e);
- (2) all the acts for completing the invention of claims 1 and 10, and those claims dependent thereon, were performed in the United States; and

P27157.A01

Serial No.: 10/689,506

(3) the effective date of the OUYANG reference (i.e., June 17, 2003) is not more than one year prior to the effective filing date of the present application, i.e., not more than one year prior to October 20, 2003.

It is respectfully submitted that the statements in the Declaration are also sufficient to satisfy the substantive requirements of 37 C.F.R. § 131. The Declaration sets forth specific facts, of sufficient character and weight, to establish a date of conception before June 17, 2003, the effective date of the OUYANG reference, and to show that the Inventors and their attorneys exercised due diligence from a time before the effective filing date of the OUYANG reference to a constructive reduction to practice, i.e., to the filing date of the application in the United States on October 20, 2003.

#### DATE OF CONCEPTION

As stated in the Declaration, the Inventors conceived a method of manufacturing a semiconductor structure, comprising the steps of forming a p-type field-effect-transistor (pFET) channel and a n-type field-effect-transistor (nFET) channel in a substrate, forming a pFET stack in the pFET channel and an nFET stack in the nFET channel, providing a first layer of material at source/drain regions associated with the pFET stack, the first layer of material having a lattice constant different than a base lattice constant of the substrate to create a compressive state within the pFET channel and providing a second layer of material at the source/drain regions associated with the nFET stack, the second layer of material having a lattice constant different than the base lattice constant of the substrate to create a tensile state at the nFET channel. The invention also concerns a method of manufacturing a semiconductor structure, comprising the steps of forming a p-type field-effect-transistor (pFET) channel and a n-

P27157.A01

Serial No.: 10/689,506

type field-effect-transistor (nFET) channel in a substrate, forming a pFET structure and an nFET structure on the substrate associated with the pFET channel and the nFET channel, respectively, etching regions of the pFET structure and the nFET structure, forming a first material with a lattice constant different than a base lattice constant of the substrate in the regions of the pFET structure to provide a compressive stress in the pFET channel, forming a second material with a lattice constant different than the base lattice constant of the substrate in the regions of the nFET structure to provide a tensile stress in the nFET channel, and doping source and drain regions of the nFET and pFET structures.

An IBM Invention Disclosure is submitted with the Declaration as supporting evidence of this prior data of conception. It is respectfully submitted that the Invention Disclosure shows that the Inventors had a definite and permanent idea of the complete and operative invention of all the pending claims 1-18 prior to June 17, 2003, the effective date of the OUYANG reference.

Applicants note that the attached invention disclosure labeled "FIS8- 0318" was forwarded to the inventors along with the Declaration and includes the subject matter of the invention recited in the claims of the instant application. In particular, the Invention Disclosure, textually, shows the features of independent claims 1 and 10 (and dependent claims). Also, Applicants submit and assert that the original Invention Disclosure "FIS8- 0318" has a date antedating the June 17, 2003 effective date of the OUYANG reference. This and all other pertinent dates have been removed from the photocopies of the Invention Disclosure and accompanying documents submitted with the Declaration to prevent any potential prejudice to Applicants.

P27157.A01

Serial No.: 10/689,506

Applicants further submit that the Declaration filed herewith shows, unequivocally, that the Inventors had in their possession a definite and permanent idea of the complete and operative invention of the pending claims before June 17, 2003 in a manner sufficient to satisfy the requirements of conception, as set forth in M.P.E.P. 715.07 and 2138.04, and thus constitute *prima facie* evidence of Applicants' date of conception of the invention in this country before the effective date of the BROOKS reference.

#### DUE DILIGENCE

Applicants further submit that the Declaration shows the Inventors and their attorneys exercised due diligence from a time before the June 17, 2003 effective date of the OUYANG reference to a constructive reduction to practice, realized by the filing of the above-identified parent application on October 20, 2003 in the United States.

The Invention Disclosure was submitted to the IBM review board before June 17, 2003. A prior art search was also performed. The invention disclosure was forwarded to outside counsel thereafter in a timely manner. Discussions between the Inventors and counsel took place until a final application was forwarded to the Inventors for execution, and subsequent filing on October 20, 2003. In particular, discussions between Inventor Chidambarrao and outside counsel took place at least in August 2003 and September 2003.

Counsel acted in an expeditious manner to prepare the application for filing. Under M.P.E.P. § 2138.06, only *reasonable* diligence is required in this regard. More specifically, § 2138.06 states that a patent attorney will be held to have exercised reasonable diligence if the attorney worked reasonably hard on the application during

P27157.A01

Serial No.: 10/689,506

the critical period, taking into consideration any backlog of unrelated cases the attorney may have had and his completion of those cases along with the present application in chronological order. Applicants respectfully submit that the Declaration shows that counsel acted sufficiently expeditiously to satisfy the requirements of due diligence.

Applicants submit that the Declaration submitted herewith is sufficient to show that due diligence was exercised as required under 37 C.F.R. § 131. The Inventors remained in regular contact with counsel to answer questions, provide technical explanation, and supply the supplemental disclosure materials necessary for allowing the application to be filed in an expeditious manner.

Accordingly, Applicants respectfully request that the rejection over claims 1-4, 10-12, 14, 15, 17 and 18 be withdrawn.

#### CONCLUSION

In view of the foregoing amendments and remarks, Applicants submit that all of the claims are patentably distinct from the prior art of record and are in condition for allowance. The Examiner is respectfully requested to pass the above application to issue. The Examiner is invited to contact the undersigned at the telephone number listed below, if needed. Applicants hereby make a written conditional petition for extension of time, if required.

P27157.A01

Serial No.: 10/689,506

Please charge any deficiencies in fees and credit any overpayment of fees to  
Deposit Account No. 09-0458.

Respectfully submitted,  
Haujie CHEN, *et al.*



Andrew M. Calderon  
Reg. No. 38,093

July 28, 2005  
GREENBLUM & BERNSTEIN, P.L.C.  
1950 Roland Clarke Place  
Reston, VA 20191  
(703) 716-1191